is frequently smaller than the area of cupping, increasing disc atrophy can be overlooked when pallor alone is used as a diagnostic guide.

The question of how best to record these observations has also become an important one. Where a fundus camera is available, a stereo photograph is a useful recording medium. Where it is not accessible, the use of geometric terms such as funnel, cylinder or hemisphere in addition to horizontal and vertical cut-to-disc ratios will suffice. Notation of the location of cup pallor will complete the picture and form a composite which can be of continuing value in following any patient.

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Temporary Press-On Visual Aids

PRISMS HAVE BEEN USED for many years in treating strabismus but have not previously received wide patient acceptance when of significant strength because of their heavy weight and cosmetically unacceptable appearance in spectacles. Lightweight plastic membranes which adhere to the back surface of spectacle lenses have recently been developed (Figure 1). These use the Fresnel principle by having a series of long narrow adjacent prisms molded into them, effectively creating high prism powers in a thin lightweight membrane. The availability of these devices has dramatically increased the usefulness of prisms and has reawakened interest in prism therapy by ophthalmologists and orthoptists. Morover, prisms may be varied in power and orientation before the eye without necessitating grinding new spectacle lenses, thus avoiding significant expense to patients. Also available are press-on spherical lenses which may be used for temporary modifications of refractive corrections, again without requiring a new pair of spectacles for a patient. The major disadvantage of the press-on aids is a slight decrease in clarity of vision through them, compared with optically surfaced glass. An additional problem is the possible tendency of practitioners to select this convenient form of therapy rather than a more involved approach which may, however, be more effective in treating a specific case.

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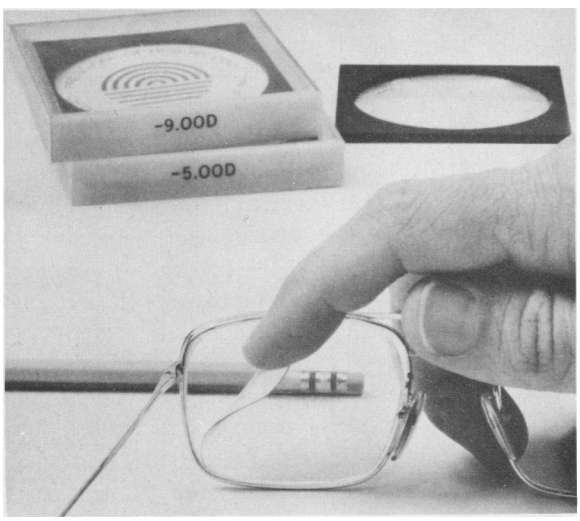

Figure 1.—Newly developed press-on membrane adds prism to spectacle lens without appreciably increasing thickness or weight.

Ophthalmic Microsurgery

THE OPERATING MICROSCOPE is coming of age in ophthalmic operations. For years skilled eye surgeons have done microscopic surgical procedures on a delicate organ which must be treated with extreme precision and care because of its optical as well as its physiological characteristics. In a real sense this type of operation has been a matter of feel and experience because of the relative inadequacy of magnification available in operating loupes. New instrumentation and new training facilities now make it possible to control surgical maneuvers using high magnification and direct visualization which force even the novice to handle tissues with the delicacy and respect of a virtuoso surgeon.

A major impetus in the popularization of ophthalmic microsurgery has been the development of

microsurgical sutures. Fine exquisitely sharp needles fused onto 10-0 nylon suture material have advanced the state of corneal repair measurably in recent years. Never before has so fine a suture been as strong and produced so little corneal reaction. Precise anatomic repair with minimal effect on the optical properties of the tissue is a goal which is within the modern ophthalmic surgeon's grasp because of the availability of these sutures. His facility in using fine sutures has improved greatly largely as a function of his ability to use the operating microscope.

Refined suture materials are not the only reason for using the operating microscope, and more and more surgical procedures are being developed which are done better because of the microscope. These include such microsurgical procedures for glaucoma as trabeculectomy and trabeculotomy, newer cataract procedures such as phacoemulsification and phacofragmentation, cataract aspiration procedures, pupillary membrane discissions, anterior chamber reconstruction, intraocular tumor resection, corneal laceration repair, corneal transplantation and a variety of surgical procedures involving the vitreous.

In addition to those operations clearly improved by the use of the microscope, more and more surgeons are using this instrument for all ophthalmic surgical procedures—including cataract extraction. Although many ophthalmologists do cataract extraction without the microscope, others now find that the microscope adds a degree of visual control which is otherwise unavailable. If a complication should occur during an operation, such as a lens capsule rupture, an intraocular hemorrhage or a vitreous loss, the surgeon who already has the microscope trained on the surgical field is far better prepared to deal with the problem than the man who must then obtain and adjust the scope or do without it entirely.

The future direction of ophthalmic operations is definitely toward increasingly sophisticated magnification systems which allow control of delicate procedures which was heretofore unavailable. Many procedures are now done which could not have been done without the operating microscope, many standard procedures are now done better with it and many new procedures will undoubtedly be developed because of it.

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Current Concepts in the Diagnosis and Treatment of Retinoblastoma

WHILE RETINOBLASTOMA remains the most common intraocular neoplasm in children, it is seen infrequently by both ophthalmologists and pediatricians. However, prompt recognition of a child with possible retinoblastoma may frequently result in saving both life and vision. The most common presenting signs of retinoblastoma are leukokoria (white pupil) and strabismus. Young children with either of these two findings must have a complete retinal examination by an ophthalmologist. Usually, ophthalmoscope appearance substantiates the diagnosis. Occasionally, unusual presentations and bizarre retinal findings contribute to difficulty in arriving at the correct diagnosis. In these puzzling cases, anterior chamber paracentesis may show elevated lactic dehydrogenase (LDH) activity when compared with the serum level of this enzyme. LDH levels have not been elevated in cases of leukokoria caused by diseases other than retinoblastoma. Very recently, a report has indicated successful development of a specific skin test for retinoblastoma using crude membrane extracts of retinoblastoma cells developed in tissue culture. Substantiation of the elevated aqueous LDH levels and skin test specificity is required, but both appear to be promising diagnostic aids. Anterior chamber paracenteses for tumor cells, P-32 uptake studies and B-scan ultrasonography may be helpful diagnostic additions in specific cases.

Prompt diagnosis and aggressive treatment have resulted in very encouraging survival rates in this potentially lethal disease. Enucleation and radiation remain the principal therapeutic choices. Currently, the therapeutic trend is gradually swinging toward the increased use of radiation. This is due to the improved results from utilization of both the linear acceleration and high doses of irradiation. A recent report suggests an overall survival rate approaching 90 percent for retinoblastoma. In the past, chemotherapy had been used primarily to augment radiation therapy in trying to eradicate the specific ocular tumor. Triethylenemelamine (TEM) administered by carotid artery injection was the principal drug used for this purpose in the United States. Because of the increased success of radiation therapy, this is now needed only in very isolated cases. Instead, chemotherapeutic emphasis is now directed toward prophylaxis in patients who are at high risk for